

LATE SUMMER FOOD HABITS OF ADULT BURROWING OWLS IN CENTRAL UTAH

by

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This paper presents information on late summer food habits of Burrowing Owls (*Speotyto cunicularia*) in central Utah. Although we have previously reported food items brought to Burrowing Owl nests during the breeding seasons of 1969 and 1970 (Smith and Murphy 1973) we have no comparable information on their feeding habits and economic status during the post-breeding season summer months.

Burrowing Owls are a relatively common raptor of the central Utah deserts. They frequently form small and medium-sized colonies during the breeding season which lasts from early April through the first week of July in this part of the Great Basin. Fledged young remain in company with adults through July and part of August. The owls usually migrate out of the area before the end of September, but a few linger into October.

From 7 August through 24 September 1971 we made casual observations of three Burrowing Owls present in desert shrub habitat on the eastern bench of the Oquirrh Mountains in central Utah. Each appeared to be a solitary individual. Two were associated with burrows which may have been of Badger (*Taxidea taxus*) origin; the third was found most frequently in a small wash. All were lightly barred and were judged to be males on the basis of sexual plumage differences described by Thompson (1971).

Methods

On 8 August we cleaned all pellets from the most commonly used mounds, fence posts, and other roosts within the owls' territories. Because we could not be sure of the seasonal origin of these pellets we do not include them in the results. Thereafter, either we or Mr. Brent Osborne made weekly collections of pellets and loose prey remains from the roosts until 24 September, after which time no Burrowing Owls were present.

Pellet contents were analyzed following methods described by Maser and Brodie (1966). Vertebrate remains were identified by comparison with speci-

Table 1. Late summer food habits of Burrowing Owls in central Utah.

Species	Number of Individuals	Percent Frequency
<i>Dipodomys ordi</i>	12	3.1
<i>Dipodomys</i> sp.	1	0.2
<i>Lepus californicus</i>	11*	2.8
<i>Peromyscus maniculatus</i>	8	2.1
<i>Microtus pennsylvanicus</i>	7	1.8
<i>Reithrodontomys megalotis</i>	2	0.5
<i>Lagurus curtatus</i>	1	0.2
<i>Eremophila alpestris</i>	2	0.5
Unidentified birds	4	1.0
<i>Nicrophorus americanus</i>	168	43.3
<i>Anuroctonus phaeodactylus</i>	53	13.7
<i>Melanoplus</i> sp.	36	9.3
<i>Aleoloplus tenuipennis</i>	41	10.6
Formicidae	23	5.9
Scarabaeidae	16	4.1
Carabidae	1	0.2
<i>Uta stansburiana</i>	2	0.5
TOTALS	388	99.8

*Remains present in 11 pellets.

mens deposited in the Brigham Young University Life Sciences Museum collections or from microscopic comparisons of hair structure. A dissecting microscope was used to aid identification of arthropod remains.

Results and Discussion

Pellet Characteristics and Composition. A total of 95 pellets were collected from the three territories. These averaged 23.8 ± 1.1 mm in length (range, 17.0-29.3 mm) and 6.1 ± 0.4 mm in width (range, 3.9-7.0 mm). Average weight of all pellets air-dried for 30 days was 0.83 ± 0.2 gm (range, 0.51-1.14 gm).

Prey remains found in pellets included (1) hair, mandibles, and various skeletal bones of mammals, (2) feathers, bills and synsacra of birds and (3) parts of legs, elytra, occasional wings, heads and tail segments of arthropods. Portions of prey or whole prey were occasionally found on the roosting mounds. Arthropod remains were found in 83 pellets, mammal remains in 27, birds in 6 and lizards in 2. Prey individuals per pellet were highly variable. Pellets containing vertebrate remains always consisted of but one vertebrate prey or portion thereof. Many also contained one or more invertebrate prey. Pellets consisting wholly of invertebrates contained from 3-13 prey of as many as three species. Pellets

consisting only of a number of individuals of the same invertebrate taxon also were common.

Food Habits. A total of 388 individuals of 12 species were recorded (Table 1). Of these, 339 were arthropods (87.3%), 41 were mammals (10.7%), 6 were birds (1.6%), and 2 were reptiles (0.05%).

Silphid beetles were the most common prey. Almost 23% of the pellets were composed wholly of silphid remains, principally elytra and legs. Numbers of individuals per pellet, based on a pairing of elytra ranged from 3-7. In addition, silphids and formicids were common in pellets made up of Black-tailed Jackrabbit (*Lepus californicus*) remains. The frequent, simultaneous occurrence of these three types of prey, coupled with the large size of an adult jackrabbit, suggests that the owls may have been obtaining jackrabbit flesh as carrion from nearby road kills. Scorpions were another common prey. Their accurate identification and numbers per pellet were determined by tabulation of the telson segment of the tail. They ranged from 1-6 individuals per pellet and were found in 13.8% of the pellets. Two species of locustids, one carabid, and several scarabaeids comprised the remainder of the recorded invertebrate prey.

Ord's Kangaroo Rats (*Dipodomys ordi*) were the most common mammalian prey, followed by Black-tailed Jackrabbits. Four pellets containing rabbit remains were found within one week at the roost of one owl. Grant (1965) reported that Burrowing Owls frequently used food depots. It is quite possible that the owl we studied was utilizing a source of jackrabbit carrion as a food depot from which it fed periodically. White-footed Deer Mice (*Peromyscus maniculatus*) and Meadow Mice (*Microtus pennsylvanicus*), both relatively common members of the community, were also frequently taken. Of the avian prey, only Horned Larks (*Eremophila alpestris*) could be positively identified. Reptiles were represented only by the Side-blotched Lizard (*Uta stansburiana*).

Comparisons with other studies suggest that the late summer food habits of the Burrowing Owls we studied were generally similar to those reported from other parts of their range. Almost all such studies have shown heavy utilization of invertebrates. Vertebrates are taken less frequently. Maser *et al.* (1971), however, in an excellent study of seasonal food habits of Burrowing Owls in central Oregon, found that usage of vertebrates and invertebrates was roughly equal, and noted a similar pattern of feeding on silphids. The fact that most studies reveal predation on locally abundant species reveals the highly opportunistic aspect of predation of these owls.

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Manuscript received February 1, 1974.